

**Table 3-12. Habitat of Bat Species Potentially Occurring
on or Near the NWTC, Golden, Colorado**

Species	Habitat in Colorado
Western Small-footed Myotis (<i>Myotis ciliolabrum</i>)	Broken terrain associated with canyons and foothills, most commonly in areas with tree or shrub cover.
Long-legged Myotis (<i>Myotis evotis</i>)	Ponderosa pine forest at elevations of 6,000 to 9,000 feet.
Little Brown Myotis (<i>Myotis lucifugus</i>)	Wooded areas from 5,000 to 11,000 feet.
Fringed Myotis (<i>Myotis thysanodes</i>)	Ponderosa pine woodlands and shrublands at elevations less than 7500 feet.
Long-legged Myotis (<i>Myotis volans</i>)	Ponderosa pine and pinyon-juniper woodlands, montane forests and shrublands up to 12,369 feet.
Red Bat (<i>Lasiurus borealis</i>)	Wooded riparian areas and deciduous trees associated with towns and cities. Migrant through Colorado.
Hoary Bat (<i>Lasiurus cinereus</i>)	Ponderosa pine and deciduous woodlands less than 10,000 feet elevation. Migrant through Colorado.
Silver-haired Bat (<i>Lasionycteris noctivagans</i>)	Forest edges, streams, and ponds from 4500 to 9500 feet elevation. Migrant through Colorado.
Big Brown Bat (<i>Eptesicus fuscus</i>)	All habitats below 10,000 feet elevation.
Townsend's Big-eared Bat (<i>Plecotus townsendii</i>)	Shrublands, pinyon juniper, open montane forests less than 9500 feet in elevation.

Source: Fitzgerald et al. 1994

Bat populations associated with the NWTC site are important because they can be injured or killed by wind turbines and guy wires. Bat collision mortality has been recently documented at some wind plants. Previous studies have documented bats colliding with other man-made structures, including buildings, lighthouses, and television towers (Van Gelder, 1956; Crawford and Baker, 1981). Most windplants have not documented any bat mortality and only small numbers of bat mortalities have been reported at other facilities (e.g., Erickson et al., 2000; Howell, 1997; Howell and Didonato, 1991; Orloff and Flannery, 1992; Anderson et al., 2000; Thelander and Rugge, 2000; P. Kerlinger Pers. Commun., March 2001). However, large numbers of dead bats have been found at some windplants, including 184 over a 2-year period at the 354-turbine Buffalo Ridge, Minnesota windplant (Johnson et al., 2000b), 35 over a 1-year period at a 31-turbine windfarm in Wisconsin (Steve Ugoretz, Wisconsin Department of Natural Resources, pers. commun., August 2000), and 85 over a 2-year period at a 69-turbine windfarm in Wyoming (Johnson et al., 2001). Most bat fatalities found at wind plants have been tree bats, with hoary, red and silver-haired bats being the most prevalent fatalities.

3.9 CULTURAL RESOURCES

Cultural resources are defined as any prehistoric or historic district, site, or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious or any other reason. Cultural resources can be divided into three major categories:

1. Prehistoric and historic archaeological resources,
2. Architectural resources, and
3. Traditional cultural resources.

Prehistoric and historic archaeological resources are locations where human activity measurably altered the earth or left deposits of physical remains (e.g., arrowheads, bottles). Prehistoric resources that predate the advent of written records in a region range from a scatter composed of a few artifacts to village sites and rock art. Historic resources include campsites, roads, fences, trails, dumps, battlegrounds, mines, and a variety of other features.

Architectural resources include standing buildings, dams, canals, bridges, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for protection under existing cultural resource laws. However, more recent structures, such as Cold War facilities, may warrant protection if they manifest the potential to gain significance in the future.

A traditional cultural resource can be defined as a property that is eligible for inclusion in the National Register of Historic Places (National Register) because of its association with cultural practices or beliefs of a living community that are rooted in the community's history and are important in maintaining the continuing cultural identity of the community. Traditional resources can include archaeological resources, buildings, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the persistence of their traditional culture.

Cultural resources are protected under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Only significant cultural resources warrant consideration with regard to adverse impacts resulting from a proposed action. Significant cultural resources are either eligible for, or listed on, the National Register. To be eligible for the National Register, a resource must meet one or more of the criteria (as defined in 36 CFR 60.4) for inclusion on the National Register. National Register-eligible resources are those that:

- a) are associated with events or have made a significant contribution to the broad patterns of our history;
- b) are associated with lives of persons significant in our past;
- c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) have yielded, or may be likely to yield, information important in prehistory or history.

In accordance with federal laws and regulations, efforts to identify significant cultural resources on NWTC property included a records search with the State Historic Preservation Office at the Colorado Historical Society Office of Archaeology and Historic Preservation (OAHP) in Denver (see Appendix E), review of previous survey reports, consultation with Native American groups, and a survey of those areas of potential impact not previously surveyed.

Three cultural resources surveys have been conducted on NWTC property. These are Labat-Anderson 1995, Dames and Moore 1991, and Burney and Associates 1988. These surveys resulted in the identification of three non-significant historic sites and two historic isolated finds (Table 3-13).

Table 3-13. Cultural Resources Identified on the NWTC Property

Site #	Description	NRHP Status	Survey
5-JF-728	Historic: Ruins of stone building	Not Eligible	Dames and Moore 1991
5-JF-729	Historic: Possible Corral	Not Eligible	Dames and Moore 1991
5-JF-754	Historic: Isolated Find: Barbed Wire	Not Eligible	Dames and Moore 1991
5 JF 755	Historic: Isolated Find: Barbed Wire	Not Eligible	Dames and Moore 1991
5-JF-992	Historic: Concrete foundation	Not Eligible	Labat-Anderson 1995

NRHP- National Register of Historic Places

Not Eligible: Sites/Isolates determined not eligible for inclusion on the NRHP

A fourth survey was conducted on private property adjacent to the NWTC (SAIC, 2001). This survey, completed on August 22, 2001 and October 23, 2001, covered the proposed gas line (option 1 and option 2) between the NWTC property and Highway 93. No additional cultural resources were identified during the fourth survey.

3.9.1 Archaeological Resources

There are no known significant archaeological resources within or adjacent to the NWTC boundary. However, Labat and Associates (1995) identified an area of approximately 6.5 acres within the northwest corner of the NWTC site as having a high potential for buried archaeological deposits.

3.9.2 Architectural Resources

All standing structures within the NWTC property boundary are less than 50 years of age, and none of the structures have a high potential to gain cultural significance in the near future. There are no significant architectural resources within or adjacent to the NWTC boundary.

3.9.3 Traditional Cultural Resources

There are no known significant traditional cultural resources within or adjacent to the NWTC boundary.

3.10 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

Hazardous materials are substances that pose a potential hazard to human health and/or the environment if improperly managed. Hazardous wastes are hazardous materials that are disposed and are defined as being hazardous by the Resources Conservation and Recovery Act (RCRA). At the NWTC, management programs for hazardous materials and wastes attempt to reduce impacts to human health and the environment by using environmentally friendly products to the greatest extent possible, thereby minimizing the use of chemicals that contain hazardous materials, and consequently minimizing the amount of hazardous waste generated.

The foundation of hazardous materials management is imbedded in NREL Policy 6-6, Risk Assessment. This policy requires all workers to evaluate new or substantially modified activities by identifying and mitigating/eliminating environmental hazards and their potential impacts. It